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Technology may disrupt occupations, but it won't kill jobs

Editor's note: This essay is part of a series being published to help commemorate the Monthly Labor Review's centennial (July 1915–July 2015). The essays—written by eminent authorities and distinguished experts in a broad range of fields—cover a variety of topics pertinent to the Review and the work of the Bureau of Labor Statistics. Each essay is unique and comprises the words and opinion of the author. We've found these essays to be enlightening and inspirational. We hope you do as well.

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As Yogi Berra famously said, "Prediction is a difficult thing, especially about the future." Predicting the structure of the labor market and U.S. economy in 2040 is a daunting task. But there is at least one thing we should be confident about: the unemployment and labor force participation rates then should be quite similar to the rates of today.

However, many of today's experts have argued that this will not be the case in 2040. Indeed, many have sounded the alarm, arguing that the rate of technological change will only accelerate, with dire consequences for the labor market. Paul Krugman has written: "Today, however, a much darker picture of the effects of technology on labor is emerging. In this picture, highly educated workers are as likely as less educated workers to find themselves displaced and devalued." MIT professors Erik Brynjolfsson and Andrew McAfee write that "in more and more domains, the most cost-effective source of 'labor' is becoming intelligent and flexible machines as opposed to low-wage humans in other countries." Lawrence Summers writes with regard to automation killing jobs: "This isn't some hypothetical future possibility. This is something that's emerging before us right now." This pessimistic narrative has taken hold to such a degree that nearly half of the 1,896 experts surveyed in a recent study by Pew Research Center believed that technology would destroy more jobs than it creates by 2025.

But here's where the *Monthly Labor Review* (*MLR*) can provide some needed historical perspective. In the 50th anniversary issue in 1965, Lloyd Ulman included this quote from a former Secretary of Labor: "In the long run, new types of industries have always absorbed the workers displaced by machinery, but of late, we have been

developing new machinery at a faster rate than we have been developing new industries…At the same time we must ask ourselves, is automatic machinery, driven by limitless power, going to leave on our hands a state of chronic and increasing unemployment? Is the machine that turns out wealth also to create poverty? Is it giving us a permanent jobless class? Is prosperity going to double back on itself and bring us social distress?" This was from the Secretary of Labor in 1927, "Puddler" Jim J. Davis.

In short, there has long been a national worry about technology-driven unemployment and that fear seems to spike either in recessions or in periods of particularly robust innovation. But to date that fear has always been misplaced. And despite the claims of current techno-distopians, these claims will be wrong going forward. We can rest easy that in 25 years the unemployment and labor force participation rates will be similar to today's.

What is likely to be different, however, is the occupational distribution of those jobs. As I have argued in *Understanding and Maximizing America's Evolutionary Economy,* the U.S. economy is best understood as a constantly evolving organism, driven by three evolutionary forces: technology, globalization, and changes in demography and values. These all work to constantly change the industrial and occupational structure of the economy.

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Of the three forces, the most powerful is technology. Over the next quarter century many industries that are now relatively immune to technology-based business model disruption could be disrupted by technology upstarts and could look quite different. Already companies like Uber and Airbnb are disrupting the taxi and hotel industries. Entrepreneurs are harnessing a suite of new information technology (IT) tools, including mobile, social, analytics, cloud, software as a service, Internet of things, and super-fast broadband, to drive transformation. IT tools are not just changing traditional information industries like newspapers, publishing, and entertainment, but also a range of other industries, including higher education, FIRE (finance, insurance, and real estate), health care, transportation, and lodging.

Radically new models of service delivery could expand and emerge, significantly disrupting many occupational labor markets. Imagine the number of university professors falling from 1.7 million down to perhaps 500,000 as most students take high-quality massively open online courses (MOOC). Imagine advanced software tools providing many of the services now provided by personal investment advisors and business benefit advisors. Imagine autonomous vehicles reducing the number of long-haul truck drivers and taxi drivers. Exactly how this process will take place, at what velocity, and in what industries and occupations is, of course, harder to predict. Indeed, as noted innovation economist Joseph Schumpeter wrote, "Technological possibilities are an uncharted sea." But what we can chart is that the waters will not be calm.

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